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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/667,403

09/23/2003

Hiroshi Sakai

01-505

1069

23400 7590 10/19/2005

POSZ LAW GROUP, PLC  
12040 SOUTH LAKES DRIVE  
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RESTON, VA 20191

EXAMINER

SEMENENKO, YURIY

ART UNIT

PAPER NUMBER

2841

DATE MAILED: 10/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/667,403

Applicant(s)

SAKAI, HIROSHI

Examiner

Yuriy Semenenko

Art Unit

2841

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) 1-10 and 15-18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 11-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Election/Restrictions*

1. Affirmation of election is acknowledged. Applicant elects with traverse Group I (claims 11-16 drawn to a multi-layer board). As stated in Response to Office Action filed on 09/20/2005. Claims 11-16 under consideration. Claims 1-10 and 17-18 have been withdrawn from consideration. Claims 1-18 are pending in this Application.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

2.1. Claims 11-13 are rejected under 35U.S.C. 103(a) as being obvious over Nakatsuka (Patent # 6208521 hereinafter "Nakatsuka" in view of Wang et al. (Patent # 6444921 hereinafter "Wang").

2.1.1. Regarding claim 11: Nakatsuka discloses a multi-layer board comprising: a plurality of conductive patterns (Fig. 6b) piled with having resin films, made of thermoplastic resin (column 5, lines 34-37), therebetween; and two separation boards 1 (Fig. 1) of a first 1a and a second 1c separation boards (column 4, lines 13-18), wherein one 1c of the two separation boards 1c and 1a, Fig. 4(b) is folded at an angle relative to a position prior to being separated, and wherein a component 8, Fig. 4(a) can be mounted on at least one released surface of the two separation boards,

except, Nakatsuka doesn't explicitly teach before being heated and pressurized, the first and the second separation boards are located at one side and another side, respectively, of at least one release film that is sandwiched in a region between two of the resin films, wherein, after being heated and pressurized, the first and the second separation boards and the release film are separated for the release film to be removed.

Wang teaches before being heated and pressurized, the first 12 (Fig. 10) and the second 20 separation boards are located at one side and another side, respectively of at least one release film 40 that is sandwiched in a region between two of the resin films 44 (column 9, lines 60-67), wherein, after being heated and pressurized, the first and the second separation boards and the release film are separated for the release film to be removed (column 9, lines 48-53). Therefore at time the invention was made, it was well know to use before being heated and pressurized, the first and the second separation boards are located at one side and another side, respectively, of at least one release film that is sandwiched in a region between two of the resin films, wherein, after being heated and pressurized, the first and the second separation boards and the release film are separated for the release film to be removed.

Therefore it would have been obvious to one of ordinary skill in the art, at time the invention was made for Nakatsuka to include in his invention before being heated and pressurized, the first and the second separation boards are located at one side and another side, respectively, of at least one release film that is sandwiched in a region between two of the resin

Art Unit: 2841

films, wherein, after being heated and pressurized, the first and the second separation boards and the release film are separated for the release film to be removed.

Benefit of doing so is to provide aided tool for build up such structure.

Although, Nakatsuka fail also explicitly teach that one side and another side of at least one release film are an upper side and a lower side, respectively, of at least one release film this aided device (release film) is capable of performing the intended use ( separate two flexible board) and then it meets the claim (claim 15). See In re Casey, 152 USPQ 235 (CCPA 1967) AND In re Otto, 136 USPQ 458, 459 (CCPA 1963). And further, it has been held In re Dailey, 357 F.2d 669, 149 USPQ 47 (CCPA 1966) that change in shape and change in size of the configuration of the claimed device was a matter of choice which a person of ordinary skill in the art would have found obvious absent persuasive evidence that the particular configuration of the claimed container was significant.

Therefore it would have been obvious to one of ordinary skill in the art, at time the invention was made for Nakatsuka to include in his invention one side and another side of at least one release film are an upper side and a lower side, motivated by its known suitability for its intended use. See MPEP §2144.07.

2.1.2. Regarding claim 12: Nakatsuka as modified, discloses in Fig. 4 (b) the multi-layer board 10 having all of the claimed features as discussed above with respect claim 11, wherein the one 1c of the two 1a and 1c separation boards is folded at an angle of approximately 180 degrees relative to a position prior to being separated.

2.1.3. Regarding claim 13: Nakatsuka as modified, discloses the multi-layer board having all of the claimed features as discussed above with respect claim 11, wherein a plate 20, Fig. 8 is provided at least one space of a first space and a second space, wherein the first space is between the separated first and second separation boards while the second space is between the surface of the multi-layer board and one of the separated first and second separation boards,

except, Nakatsuka doesn't explicitly teach a plate is spacer which is provided at least one space.

Art Unit: 2841

Wang teaches a spacer 19", Fig. 5, is provided at least one space. Therefore at time the invention was made, it was well know to use a spacer is provided at least one space.

Therefore it would have been obvious to one of ordinary skill in the art, at time the invention was made for Nakatsuka to include in his invention a spacer is provided at least one space.

Benefit of doing so is to provide rigid for the multi-layer board.

2.2. Claim 14 is rejected under 35U.S.C. 103(a) as being obvious over Nakatsuka (Patent # 6208521 hereinafter "Nakatsuka" in view of Wang et al. (Patent # 6444921 hereafter "Wang") and in view of Gebhardt et al. (Patent # 6444921 hereafter "Gebhardt").

2.2.1. Regarding claim 14: Nakatsuka as modified, discloses the multi-layer board 1; Fig. 1(a) having all of the claimed features as discussed above with respect claim 11, further comprising: a certain region 1 between the resin films, wherein the certain region precludes a first region where the release film was sandwiched before being separated and a second region 3 where the folded separation board is curved,

except, Nakatsuka doesn't explicitly teach reinforcing member provided in a certain region between the resin films.

Gebhardt teaches discloses in the "Background of the invention" section, at the time the invention was made, it was well know that reinforcing member provided in a certain region between the resin films (column 1, lines 43-50).

Therefore it would have been obvious to one of ordinary skill in the art, at time the invention was made for Nakatsuka to include in his invention reinforcing member provided in a certain region between the resin films.

Benefit of doing so is to provide rigid for the multi-layer board.

2.3. Claims 15 and 16 are rejected under 35U.S.C. 103(a) as being obvious over Nakatsuka in view of Wang and in view of Admitted by Applicant ( Prior Art, hereinafter "APA")

Art Unit: 2841

2.3.1. Regarding claim 15: Nakatsuka discloses a multi-layer board, wherein the multi-layer board includes, a plurality of conductive patterns (Fig. 6b) piled with having resin films, made of thermoplastic resin (column 5, lines 34-37), therebetween, and two separation boards 1 (Fig. 1) of a first (1a) and a second (1c) separation boards (column 4, lines 13-18), wherein, and wherein one (1c) of the two separation boards (1c and 1a, Fig. 4(b)) is folded at an angle relative to a position prior to being separated; and a component 8, Fig. 4(a) mounted on at least one released surface of the two separation boards of the multi-layer board,

except, Nakatsuka doesn't explicitly teach before being heated and pressurized, the first and the second separation boards are located at one side and another side, respectively, of at least one release film that is sandwiched in a region between two of the resin films, wherein, after being heated and pressurized, the first and the second separation boards and the release film are separated for the release film to be removed.

Wang teaches before being heated and pressurized, the first 12 (Fig. 10) and the second 20 separation boards are located at one side and another side, respectively of at least one release film 40 that is sandwiched in a region between two of the resin films 44 (column 9, lines 60-67), wherein, after being heated and pressurized, the first and the second separation boards and the release film are separated for the release film to be removed (column 9, lines 48-53). Therefore at time the invention was made, it was well know to use before being heated and pressurized, the first and the second separation boards are located at one side and another side, respectively, of at least one release film that is sandwiched in a region between two of the resin films, wherein, after being heated and pressurized, the first and the second separation boards and the release film are separated for the release film to be removed.

Therefore it would have been obvious to one of ordinary skill in the art, at time the invention was made for Nakatsuka to include in his invention before being heated and pressurized, the first and the second separation boards are located at one side and another side, respectively, of at least one release film that is sandwiched in a region between two of the resin films, wherein, after being heated and pressurized, the first and the second separation boards and the release film are separated for the release film to be removed.

Benefit of doing so is to provide aided tool for build up such structure.

Art Unit: 2841

Although, Nakatsuka fail also explicitly teach that one side and another side of at least one release film are an upper side and a lower side, respectively, of at least one release film this aided device (release film) is capable of performing the intended use (separate two flexible board) and then it meets the claim (claim 15). See *In re Casey*, 152 USPQ 235 (CCPA 1967) AND *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). And further, it has been held *In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966) that change in shape and change in size of the configuration of the claimed device was a matter of choice which a person of ordinary skill in the art would have found obvious absent persuasive evidence that the particular configuration of the claimed container was significant.

Therefore it would have been obvious to one of ordinary skill in the art, at time the invention was made for Nakatsuka to include in his invention one side and another side of at least one release film are an upper side and a lower side, motivated by its known suitability for its intended use. See MPEP §2144.07.

except, Nakatsuka doesn't explicitly teach the multi-layer board is a part of a mobile device.

Applicant discloses in the "Background of the invention" section, at the time the invention was made, it was well know to use a mobile device such as a cell phone, with the multi-layer board.

Therefore it would have been obvious to one of ordinary skill in the art, at time the invention was made for Nakatsuka to include in his invention a mobile device, motivated by its known suitability for its intended use. See MPEP §2144.07.

2.3.2. Regarding claim 16: Nakatsuka as modified, discloses the mobile device 1, Fig. 1(a) having all of the claimed features as discussed above with respect claim 15, wherein a first electrical component (8c), Fig. 6(b) is disposed on the released surface of one of the separated two separation boards that is folded at an angle approximately 180 degrees relative to a position prior to being separated, and wherein a second electrical component (8a) are disposed on the released surface of the other of separated two the separation boards.

Although, Nakatsuka does not explicitly teach that the first electrical component is a sheet key and the second electrical component is an LCD connector and an LCD module, Applicant



Art Unit: 2841

discloses in the "Background of the invention" section, at the time the invention was made, it was well known to use a mobile device such as a cell phone, with the multi-layer board with many components, wherein such devices as usually includes sheet key, LCD connectors and LCD module.

Therefore it would have been obvious to one of ordinary skill in the art, at time the invention was made for Nakatsuka to include in his invention a sheet key is disposed on the released surface of one of the separated two separation boards and LCD connector and an LCD module are disposed on the released surface of the other of separated two the separation boards, motivated by its known suitability for its intended use. See MPEP §2144.07.

### ***Relevant Art***

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

3.1. Bohn (Patent # 6537412) hereafter Bohn teaches a process and an apparatus are provided for producing multilayer having on each of their two outer sides an outer metal foil and between them at least one additional layer. These foils and/or layer(s) are connected to each other by intermediate layers impregnated with adhesive, and the foils of several multilayer are stacked on top of each other, while a separation layer is inserted between them, and are then simultaneously pressed together. It is essential that the metal foil be placed around the separation layer on its underside, end side and upper side in a U-shape before the separation layer is supplied to the multilayer structure.

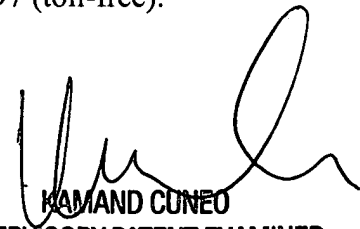
4.1. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yuriy Semenenko whose telephone number is (571) 272-6106. The examiner can normally be reached on 8:30am - 5:00pm.

Art Unit: 2841

4.2. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamand Cuneo can be reached on (571)- 272-1957. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

4.3. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

YS



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